

Application No.: 10/694,109  
Amendment dated: December 26, 2007  
Reply to Office Action of September 25, 2007  
Attorney Docket No.: 21295.67US1 (115685US)

### Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in this application:

### Listing of Claims

Claim 1 (currently amended): A microscope system for the analysis and evaluation of multiple colorings in a microscopic specimen, comprising:

a scanning microscope that defines an illuminating light beam and a detected light beam;

an SP module that is arranged in the detected light beam in front of at least one detector; and a computer system with a memory, wherein a database is provided in which discrete dye spectra are stored;

the computer system encompasses a software program that performs a transformation of the data of the ascertained spectra and a transformation of the dye spectra stored in the database; and

the software program allocates the transformed dye spectra to the measured spectra, in which context a comparison can be performed,

wherein the comparison is accomplished by way of a distance dimension in a projection space.

Claim 2 (canceled)

Claim 3 (currently amended): The microscope system as defined in Claim 1, wherein the comparison is accomplished by way of the a distance and the an orientation of local clusters in the projection space.

Claim 4 (original): The microscope system as defined in Claim 1, wherein the transformed data can be presented on a display.

Claim 5 (currently amended): A method for the analysis and evaluation of multiple colorings in a microscopic specimen using a scanning microscope, comprising the



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following steps:

- a) recording spectra of dyes present in the specimen using an SP module, and ascertaining the electrical signals representing the spectra;
- b) performing a transformation of the data of the ascertained spectra, performing the transformation of the dye spectra stored in a database;
- c) dividing the a transformation space into regions, each of which is allocated to a certain dye; and
- d) allocating the dye spectra to the measured spectra by way of a comparison in the transformation space,

wherein the comparison of the ascertained spectra to reference spectra is accomplished on the basis of a distance dimension.

Claim 6 (canceled)

Claim 7 (currently amended): The method as defined in Claim 5, wherein the comparison of the ascertained spectra to the reference spectra is accomplished on the basis of a distance dimension and the directions of the eigenvectors of the covariance matrix.

Claim 8 (currently amended): The method as defined in Claim 5, wherein the allocation of the dye spectra to the measured spectra is accomplished on the basis of the a "nearest neighbor" method in the transformation space.